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## The name *Buthotrephis gracilis* Hall

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While engaged in the work of identifying and naming certain of the specimens in the paleobotanical museum of the New York Botanical Garden my attention was called to the confusion that obtains in connection with the use of the name *Buthotrephis gracilis* Hall; and in the hope of establishing hereafter the correct application of this name it has been deemed advisable to present the following account of its origin, together with a brief discussion of the principles of nomenclature that are involved with it:

In 1843 Hall\* described and figured a fossil furoid from the Clinton group, under the name *Fucoides gracilis*.

In 1847† he described and figured a similar fossil from the Trenton limestone, under the name *Buthotrephis gracilis*.

In 1852‡ he described and figured another specimen from the Clinton Group under the name *Buthotrephis gracilis*, and included with it, as a synonym, his *Fucoides gracilis*, followed by the note "Not *B. gracilis*, Pal. N. York, Vol. 1, pag. 62, pl. 21, fig. 1. The species of the Clinton group will retain this name by precedence, and that of the Trenton limestone may be changed to *B. tenuis*."

From a consideration of the above facts it may be appreciated that in common usage the name *Buthotrephis gracilis* Hall might be meant to indicate either one of the two species which Hall regarded as distinct from each other and as representing two distinct and rather widely separated geologic horizons. A critical study of literature relating to the subject has shown this to be the case and, further, that the changes in nomenclature suggested by Hall have received but scant attention on the part of most writers. These conditions have, in consequence, led to more or less confusion, and to considerable doubt in many instances as to which species is meant where a fossil furoid is referred to as *Buthotrephis*

\*Nat. Hist. N. Y. Pt. IV, Rept. Fourth Geol. Dist. 69, f. 14.

†Ibid., Pt. VI, Paleont. N. Y. 1: 62. pl. 21. f. 1.

‡Ibid., Pt. VI, Paleont. N. Y. 2: 18. pl. 5. f. 1a-1d.

*gracilis* Hall. This is especially true in the case of local lists of fossils, as for instance in such a list from the Trenton limestone of any locality, in which the name may be found included, without comment or adequate description, and the intention of the author of the list can only be inferred. The probability, of course, is that he is referring to the Trenton limestone species, but on the other hand he may be announcing the discovery of the Clinton *B. gracilis* in the Trenton limestone. Hence it is frequently more or less hazardous to draw conclusions in regard to the areal or stratigraphic distribution of the species recognized as *Buthotrephis gracilis* from such lists or other similar publications.

In this connection, as an indication of the extent to which the application of correct nomenclature has been disregarded, the following data may be of interest:

In sixty-five references to *Buthotrephis gracilis* Hall, twenty-three were found to refer more or less clearly to the Trenton species and twenty-four to the Clinton species, while in regard to the remaining eighteen it was impossible to hazard more than a guess as to which species the author had in mind. From among all of these references, therefore, more than one fourth were useless as a basis for accurate conclusions or inferences.

In twenty-six references to what was clearly intended to mean *Buthotrephis tenuis* Hall, twenty-three referred to it as *B. gracilis*, but fortunately with more or less plain indications as to which species was meant, while in the three remaining references only was it called *B. tenuis*.

Finally, attention is called to the fact that in accordance with our accepted rules of nomenclature the binomial *Buthotrephis gracilis* Hall, 1847, by reason of priority of publication, must be applied to the Trenton species, and the name *B. tenuis*, which he subsequently proposed for it, in 1852, becomes merely a synonym. Further, his transfer of the Clinton species, *Fucoides gracilis*, to the genus *Buthotrephis*, in 1852, required that this species be renamed, for the reason that the original specific name, *gracilis*, had been previously combined with *Buthotrephis* to represent the Trenton species. As this has not heretofore been done, so far as I am aware, the name *Buthotrephis Hallii* is now proposed for the Clinton species, in honor of the founder of the genus.

The synonymy of the two species may therefore be given as follows:

**Buthotrephis Hallii** nom. nov.

*Fucoides gracilis* Hall, Nat. Hist. N. Y. Part IV, Rept. Fourth Geol. Dist. 69. f. 14. 1843.

*Buthotrephis gracilis* Hall, *ibid.*, Part VI, Paleont. N. Y. 2: 18. pl. 5. f. 1a-1d. 1852. Not *B. gracilis* Hall, *ibid.* 1: 62. pl. 21. f. 1. 1847.

BUTHOTREPHIS GRACILIS Hall

Nat. Hist. N. Y. Part VI, Paleont. N. Y. 1: 62. pl. 21. f. 1. 1847.

*Buthotrephis tenuis* Hall, *ibid.* 2: 18 [note under synonymy]. 1852.